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PROVIDENCE, R.I.

Report of the Superintendent
of Health upon the subject of
fat and lard melting. By E.M.
Snow. 1871.

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[No. 22.]

REPORT
OF THE
SUPERINTENDENT OF HEALTH,
UPON THE SUBJECT OF
FAT AND LARD MELTING.

Presented to the Board of Aldermen September 4, 1871.



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THE CITY OF PROVIDENCE.

IN BOARD OF ALDERMEN,

September 4, 1871.

The Superintendent of Health to whom was referred complaints against certain parties, for nuisances created by fat and lard melting, makes report in relation to the whole subject.

Read : whereupon it is ordered that the same be received and printed in pamphlet form.

Witness :

SAMUEL W. BROWN, CITY CLERK.

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REPORT.

OFFICE OF THE SUPERINTENDENT OF HEALTH,
PROVIDENCE, August 14, 1871.

TO THE HONORABLE THE BOARD OF ALDERMEN:—

GENTLEMEN.—I have received a list of the fat boiling establishments in the city, prepared by the late Chief of Police, and referred to me by vote of your Board “to examine and report upon.”

I have visited and examined the places reported, and have enquired into the nature and extent of the business carried on in them.

The business of all of them is the manufacture of lard. Part of them try the lard in open kettles heated by steam; others use steam tanks into which the pork is put and subjected to a high pressure of steam, which extracts all fatty matters from every portion of the animal matter that is subjected to the process.

At this season of the year, all the establishments use only fresh killed pork, before there is any opportunity for it to become tainted. The process, then, in all the places named, is the extraction of the fat from fresh killed pork, and as the heating is wholly done by steam, there is no chance that the animal matter will be burned so as to give off any offensive odors in that way. The odor is that of fresh lard heated to a high temperature.

Those who make use of the open kettles, use only the leaves, and fat of the fresh pork, and the process is the same as in trying fat in families, except in the quantity used, and perhaps, the higher temperature obtained by the use of steam. The residue after the process is completed is simply scraps, which are entirely sweet, and without offensive odor, other than that which always belongs to heated pork fat. By this process, with open kettles, the best quality of lard is obtained.

By the other process in which steam tanks are used, the hog is cut up, and nearly all portions of the body and limbs of the animal may be used. They are put into an upright cylindrical tank which is tightly closed, and subjected to a high pressure of steam. In one place I was informed that a pressure of thirty pounds to the square inch was used, in another the pressure was said to be seventy pounds.

By this process every particle of fat is extracted from all portions of the animal, and even the large bones of the head are reduced to a soft substance easily crushed in the hand. The solid matters, the water, and the pure fat become separated in the tank, and the fat is drawn off by fascets, and cooled for sale. The refuse animal matter is taken out of the tanks every morning, and sold for manure.

It is evident that the lard made by this process must be of a different character from that obtained by boiling the clear leaves and fat of the pork. The fat extracted from bones and other portions of the animal is not the same as that from the leaves of fat.

Such is the process as I have learned it in brief visits to the establishments reported. It should be observed, that while at this season of the year pork only is used that is killed in the city and is entirely fresh, yet in the winter season, pork is used that is killed at the west and brought here in cars. At that season, it not unfrequently happens that, owing to delays in transportation, and changes in the weather, the pork becomes black and to some extent tainted and offensive. It is evident that at that season the process of fat melting might often be much more offensive than at other times.

Such is the process and such are the circumstances attending it. The question to be considered is this: *Does this process conducted in this manner, constitute a nuisance which demands the action of your Board for its abatement?*

The answers to this question will be of the most contradictory character. If you visit these establishments, no special nuisance will be found. They are conducted in as cleanly a manner as the business will allow, and we are bound to believe, from the character of the owners, in most cases, that they are desirous of doing nothing that will be an injury to their neighbors, or will make a public nuisance.

The greater portion of the odor of the boiling fat is carried upwards by the chimneys and ventilating drafts, so there is no odor perceived in the establishment which would be specially offensive except to Hebrews, and to those Christians who believe that the Lord had good and sufficient reasons for declaring swine to be unclean animals, and forbidding the use of their flesh by his chosen people.

If we enquire on the spot of the owners, or employées of the establishment, they scout the idea of there being any possible nuisance in the business they carry on. They would have you believe that their business is the healthiest in the world; that no person engaged in it is ever known to be sick; and they will tell you that you might as well complain of frying crullers or doughnuts, as being a nuisance.

This is nearly the language I heard at one of the establishments reported, in my investigations upon the subject. But on the very same day, I was informed by parties of the highest respectability and character, living twenty, thirty, and more rods from the same establishment, that the odor from it is extremely offensive, that it is perceived almost every day in the year except when the wind is strong in the opposite direction; that they are often compelled to close their windows to avoid it; that women and children are made sick by it, and that some persons have been obliged to leave their rooms entirely on account of it. These parties are ready to make these statements before your Board or elsewhere.

There are great numbers of other persons who have not been troubled to the same extent, but who have often perceived, and have been annoyed by, disagreeable and offensive odors from these establishments. I have no doubt that some if not all the members of your Board can testify to this.

It is a well known fact, and easily explained, that persons who are constantly employed in any offensive business will become accustomed to the disagreeable odors so that they will be no longer offensive to them. Such persons are inclined to scout the idea that these odors can be offensive to others, or can make others sick. This will explain to some extent, the positive language of denial upon this subject, generally used by those employed in such establishments.

Another fact will also aid in explaining the contradictory testimony we find in relation to this matter. It is the fact that the greater portions of the offensive odors in these establishments are carried upwards by the ventilating flues, and are not perceived by those in them. But with favorable winds and atmosphere, these same offensive odors, with all their concentrated nauseousness, will be carried directly into the family rooms and bed chambers of persons living at considerable distances from the source of the nuisance.

Even the worst nuisance in the city, the establishment for boiling dead animals and slaughter house offal at Field's Point, is comparatively inoffensive on the spot; but the most horrible stench is wafted from it by the winds, to the hills beyond, to vessels and steamboats in the harbor, and sometimes even, pervade large portions of the city.

It is certainly possible that the fat boiling establishments in the city may be comparatively inoffensive inside, and yet may be serious and annoying nuisances to great numbers of people at considerable distances from them.

But they have fat boiling establishments in other cities, and are taking measures to get rid of them. Perhaps the opinions of others in relation to the business, and their experience in connection with it, may be of value to us in deciding the question whether the business is a nuisance that ought to be removed.

I have before me recent reports from the Health Departments of St. Louis, and of the city of New York. They both refer to fat rendering establishments. The report from St. Louis says:—

“There is no factory in this city, where fat is rendered in an inoffensive, or in the most approved manner. Many have nominally steam-tight tanks, but in all instances that I have seen, the foul steam escapes to a greater or less extent, from the imperfectly steam-tight cover, and thence freely ascending contaminates the surrounding atmosphere. The odors that emanate from these establishments during the process of rendering, are nauseating and sickning in the highest degree. In many establishments the business is conducted in the rudest possible manner, and no attempt, whatever, is made to control, or neutralize the disgusting odors that emanate from them, while in others imperfect and unscientific apparatuses have been contrived, usually by the proprietors themselves, but none of which meet the requirements of the necessity. It is time those engaged in the occupation, and they are mostly men of wealth and intelligence, should be compelled to conform to sanitary laws, and be no longer permitted to inflict suffering and disease on the community, as well as pecuniary loss and discomfort.”

The following extract from the report of the Board of Health, of New York City, dated April 27, 1871, shows the action that has been taken in that city in relation to fat and lard melting establishments. The Health Department of New York, succeeded to all the powers and duties of the Metropolitan Board of Health, and was organized in the spring of the year 1870. The action referred to in the following extract, was taken during the last year:—

“Fat and Lard Melting.”—Soon after the organization of this Board, all permits for rendering fat and lard in the city of New York were revoked, and the whole subject received a careful consideration. On the 5th day of July the Board adopted an additional ordinance, prohibiting the melting or rendering of fat, tallow or lard, except when fresh from the slaughtered animal, and taken directly from the places of slaughter in the city of New York, and in a condition free from sourness and taint, and all other causes of offence at the time of rendering. The ordinance further provides that all melting

and rendering shall be in steam-tight vessels, the gases and odors therefrom to be destroyed by combustion or other means equally effective, and that the premises where the same is conducted must be free from all offensive odors and other cause of detriment to the public health. The bringing of fat, lard or tallow (except as a part of the living animal) into the city of New York, to be melted or rendered, and the melting or rendering of the same, are also prohibited. On the 5th day of July the Board directed the City Sanitary Inspector to notify all persons interested in the fat and lard melting business, of a hearing before the Sanitary Committee, in order to present their views, verbally or in writing, as to the best mode of carrying on said business, and in locations which cannot be objected to. This hearing resulted in the conclusion that a distinction must be made between the rendering of fresh lard, which is used as an article of food, and which, if not melted when fresh, loses a considerable part of its value, and the melting of fat or tallow, which, as an article of commerce, does not depreciate so materially if sour or tainted. Permits were therefore granted, subject to the ordinance above referred to, "to melt or render fresh lard, provided such fresh lard is taken from the slaughtered animal upon the premises where it is to be rendered." The Board refused to grant permits to melt fat or tallow at any place within the built-up portions of the city."

Having stated these facts in relation to the business of fat and lard melting in this city, and in other places, and having shown the opinions of others upon the subject, we are now ready to give an answer to the question, already stated, which is to be decided by your Board, namely: *Does this process of fat and lard melting, conducted as it is in this city, constitute a nuisance which demands the action of your Board for its abatement?*

I am compelled, after the most careful consideration, to answer this question in the affirmative, for the following reasons:

First. The statement of the petition before your Board is, that the odors almost constantly arising from the fat and lard melting establishments in this city, are disagreeable and unwholesome. This statement is fully confirmed by my own investigation, and, in fact, is within the knowledge of each member of your Board, as well as of thousands of our citizens.

Second. The statement is confirmed to the fullest extent by the description of similar establishments in other cities, and by the action of the authorities of other cities for the suppression of the nuisance caused by them.

Third. The disagreeable, offensive and unwholesome nature of the odors arising from fat-melting establishments, is not only proved by abundant evidence ; but the scientific description of the operation itself shows that it must be so.

Dr. Moreau Morris, the present Sanitary Superintendent of New York city, in a report to the Metropolitan Board of Health, in 1866, thus describes the nature of the process of fat and lard melting :

“Animal fat, with which this report has special reference, is contained in the adipose or cellular tissue obtained from slaughtered animals. This is extracted by exposure to heat of sufficient intensity to liquify the fat and burst the containing cells. It is during this exposure to heat that the foul odors are given off, in the form of gaseous vapors, consisting of sulphuretted and phosphuretted hydrogen and ammoniaical gases. The odor of these is more or less offensive, depending upon the amount of decomposition of the crude material before the time of heating. These animal tissues containing fat are much more subject to rapid decomposition than other portions of the animal.

When only fresh, recently slaughtered, raw, fatty material is used, before decomposition takes place, the smell of melting fat is not unlike that from the ordinary cooking of fresh meat. From the fact that the butchers, from their scattered locations (in many instances miles from the fat-melting establishments), either from carelessness or want of time, fail to bring their fatty material to the melting-house until many hours have elapsed, during which rapid decomposition takes place, arises much of the evil complained of, and it should not altogether be charged upon the tallow melters.

If the slaughtering of cattle could all be done at one or two points, and the melting of the fatty tissues at the same places, this offense (even by the ordinary processes) would be slight in comparison with what it is under present circumstances. Nevertheless, under any condition, there will always be given off offensive odors during the melting process, from the fact that more or less of nitrogenized matters are being decomposed, which are always in combination with these fatty materials.

The methods by which tallows and fats are extracted from the raw animal tissues, as they come under observation in this city are few, and, with some exceptions, of the rudest kind. The energies of those engaged in the business seem to have been directed to the construction of tall chimneys, in order to diffuse to a greater distance the nuisance caused by their ignorance."

* * * * * *

"The time, indeed, has arrived when competent authority shall take cognizance of this relic of antiquity. Those engaged in it should be compelled to recognize the requirements of sanitary laws and the advancement of science. Parsimony or ignorance have no right to inflict a nuisance, which is declared to be dangerous to health, upon an intelligent public."

Such is the description of the process of fat melting in New York city, and it is generally applicable with perfect exactness to the establishments in this city.

There is one fact referred to in the extract just quoted which, I think, is quite important in judging of the character of the nuisance made in fat and lard melting, as well as in deciding upon the measures to be taken for preventing the nuisance.

It is the fact that raw animal fat, when exposed to the air, speedily decomposes, and very quickly acquires an odor more offensive and entirely different from the odor of the same material when the animal is first killed. This same fact has been noticed in regard to other substances.

Another fact should be also noticed. It is that the quantity of the substance often decides the extent of the nuisance. An ounce of decaying animal flesh may be offensive; but it makes no such nuisance as a dead and decaying horse. In the rendering of lard in families, the quantity is so small that it could make no serious nuisance, and besides it is used when so fresh, that comparatively no nuisance is caused by it.

It seems to me to be established that the fat and lard melting establishments, as conducted in this city, do make a nuisance which requires to be abated.

It remains to be decided, what action shall be taken by the Board of Aldermen, acting as a Board of Health, for the suppression of the nuisance.

I would recommend the following :

First. That the rendering of fat or lard, within the limits of the city, be entirely prohibited, except it be from animals slaughtered for food, and unless it be done within twenty-four hours after the animal is killed from which the fat or lard is taken.

The reason of this order is obvious, from the preceding report. The effect of it would be to stop the rendering of the fat and lard of animals killed at the West. It would also stop the boiling of offensive fat from animals that have died from natural causes.

Second. That the rendering of fat and lard in open kettles be prohibited, and it be allowed to be done only in such tanks or kettles as shall effectually consume all odors from the heated fat.

The effect of this, if enforced, would be to close all the fat and lard melting establishments in the city. At present, where any attempt is made to consume the offensive odors, the combustion is so imperfect that the animal matter contained in the steam is only scorched, and passes out of the chimney in a far more offensive condition than it was originally. There are however several processes by which the odors from the heated fat may be effectually destroyed, and it is no more than right that parties engaged in the business should be compelled to use these processes.

It is certain, that all fat and lard melting should be done in immediate connection with the places where the animals are slaughtered, and that neither fat and lard melting establishments, nor slaughter-houses should be permitted in the compact portions of cities.

Respectfully submitted,

EDWIN M. SNOW, M. D.,

Superintendent of Health.





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Author

Providence. Board
of health.

Report of the Sup.

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